1. A method to handle operation exceptions in an automated

manufacturing system, said method comprising:

providing an automated manufacturing system comprising

a means to track progress of work in process against

5   standard process flows and a means to select said product

lots for processing from said work in process and to select

equipment for processing said product lots based on next

step information from said standard process flows;

monitoring said automated manufacturing system for

10   operation exception events wherein said product lots must

deviate from said standard process flows;

selecting a floating process flow corresponding to

said operation exception event and said product lots from a

floating process flow database;

15   linking said floating process flow to said standard

process flow such that said next step is derived from said

floating process flow;

thereafter continuing manufacturing using said

floating process flow;

20   unlinking said floating process flow and said standard

process flow such that said next step is derived from said

standard process flow when said floating process flow is

completed.

2. The method according to Claim 1 wherein said operation exception event comprises an operator interaction with said automated manufacturing system.

3. The method according to Claim 2 wherein said operator interaction comprises a mouse click on a graphical user interface.

4. The method according to Claim 1 wherein said operation exception event comprises an automated signal from said automated manufacturing system.

5. The method according to Claim 1 wherein said operation exception event comprises an N2 purge, a carrier replacement, a product rework, a carrier cleaning, or a monitor lot preparation.

6. The method according to Claim 1 wherein said step of selecting a floating process flow further comprises:

selecting floating process sub-flows from said floating process flow database;

5 constructing said floating process flow by linking together said floating process sub-flows; and

modifying said floating process sub-flows to include

information specific to said product lots and said

equipment.

7. The method according to Claim 6 wherein said step of

selecting floating process sub-flows is based on selecting

said floating process sub-flows having common capacities.

8. The method according to Claim 6 wherein said step of

modifying said floating process sub-flows further comprises

embedding specific information into recipes in said

floating process sub-flows.

9.   The method according to Claim 8 wherein said specific

information is embedded into recipe identifiers or

parameters.

10.   An apparatus to control floating process flows in an

automated manufacturing system, said apparatus comprising:

an operation interface to monitor automated

manufacturing system for operation exception events wherein

5   said product lots must deviate from said standard process

flows;

a management unit to create, update, and delete floating process flows;

a data unit to store said floating process flows; and

10   a control unit to select said floating process flows corresponding to said operation exception events.

11. The apparatus according to Claim 10 wherein said operation interface further comprises a graphical user interface capable of operator interaction.

12. The apparatus according to Claim 10 wherein said operation interface further comprises an automated signal coupled between said apparatus and said automated manufacturing system.

13. The apparatus according to Claim 10 wherein said operation exception event comprises an N2 purge, a carrier replacement, a product rework, a carrier cleaning, or a monitor lot preparation.

14. The apparatus according to Claim 10 wherein said selecting a floating process flow further comprises:

selecting floating process sub-flows from said floating process flow database;

5   constructing said floating process flow by linking

together said floating process sub-flows; and

      modifying said floating process sub-flows to include

information specific to said product lots and said

equipment.

15. The apparatus according to Claim 14 wherein said step

of selecting floating process sub-flows is based on

selecting said floating process sub-flows having common

capacities.

16. The apparatus according to Claim 14 wherein said step

of modifying said floating process sub-flows further

comprises embedding specific information into recipes in

said floating process sub-flows.

17. The apparatus according to Claim 16 wherein said

specific information is embedded into recipe identifiers or

parameters.

18. An apparatus to control an automated manufacturing

system, said apparatus comprising:

      a means to track progress of work in process against

standard process flows;

5   a means to select said product lots for processing

from said work in process and to select equipment for

processing said product lots based on next step information

from said standard process flows; and

a means to control floating process flows in an

10   automated manufacturing system, said means comprising:

an operation interface to monitor said automated

manufacturing system for operation exception events

wherein said product lots must deviate from said

standard process flows;

15   a management unit to create, update, and delete

floating process flows;

a data unit to store said floating process flows;

and

a control unit to select said floating process

20   flows corresponding to said operation exception

events.

19. The apparatus according to Claim 18 further comprising

a transportation system to automatically move said product

lots without human intervention.

20. The apparatus according to Claim 18 wherein said

operation interface further comprises a graphical user

interface capable of operator interaction.

21. The apparatus according to Claim 18 wherein said

operation interface further comprises an automated signal

coupled to said automated manufacturing system.

22. The apparatus according to Claim 18 wherein said

selecting a floating process flow further comprises:

    selecting floating process sub-flows from said

floating process flow database;

5   constructing said floating process flow by linking

together said floating process sub-flows; and

    modifying said floating process sub-flows to include

information specific to said product lots and said

equipment.

23. The apparatus according to Claim 22 wherein said step

of selecting floating process sub-flows is based on

selecting said floating process sub-flows having common

capacities.

24. The apparatus according to Claim 22 wherein said step

of modifying said floating process sub-flows further

comprises embedding specific information into recipes in

said floating process sub-flows.

25. The apparatus according to Claim 24 wherein said

specific information is embedded into recipe identifiers or

parameters.